





Procedure

- I. Record transmitter final r.f. stage plate current and plate voltage. Record r.f. current into r.f. line(s) and r.f. voltage across line(s). (If more than one transmitter, record above for all transmitters as survey proceeds. If you have any linear r.f. amplifiers, to boost r.f. on the line at some point, record plate and line currents and voltages as above. Note whether r.f. amplifier is operating Class A or Class B).
- II. On a large scale map of the campus area, (indicate approximate scale if unable to procure a scale map) record the following data; noting the direction in which the maximum signal is observed at each point where a reading is taken:

In daytime:-

1. In each dormitory measure campus station signal strength. (It is a good idea to take readings on several floors, and indicate the maximum and minimum readings obtained in each dorm.)
2. At a central point among the dormitories measure the field strength of each local station.
3. Measure field strength of campus station at at least 2 or 3 points along each major line of the r.f. transmission system. Make from two to five readings at each point by moving away from the line until the signal level drops to 15 microvolts per meter, or begins to increase due to proximity of other r.f. lines, etc.
4. Measure field strength of campus station at at least 2 or 3 points along all secondary (115/230v circuits) lines that are coupled into and which therefore carry your r.f. Take from 2 to 5 readings the same as in step 3. Note distances if map not to scale.
5. At at least 4 points outside of the campus area, and be sure to go in each major direction away from the campus, measure the signal of your campus station where it can be picked up. Indicate also the location of all high voltage feeders which radiate your signal as they approach or leave the campus. Take readings to indicate the amount of radiation from these feeders the same as you previously did when checking your own r.f. lines in step 3.

Note:

During these tests make sure that you actually have your own station and not an interfering station on the same frequency. If the strength of other stations on your frequency is appreciable, move your station to a nearby channel which is free of such interference for the tests, (or permanently if justified!). If it is not possible to find a channel where other stations during the day are weak enough, then you will have to make your measurements when no other station is on the air. This may only occur very late at night, between 1 or 2 AM and 6 or 7 AM.

At Night:-

1. During normal evening broadcast period repeat some of the readings taken in 1, 2, 3 and 4 for comparison. You will probably not be able to repeat your readings down around 15 microvolts per meter because of the greater signals put in by other stations on your channel due to the night-time sky-wave effect.

- III. Note noise level and level of other stations on your station frequency at various times of day and evening up to midnight (your station will of course be off the air for this test).
- IV. Note in colored pencil on the campus map the a-c wiring on your campus, and the route of your r.f. lines.
- V. Make a separate schematic diagram of your r.f. transmission system from transmitter tank to each coupling point showing all types of coupling used. Indicate which lines are above and below ground.